CLAIMS

1. A method for preparing a cell extract for use in a cell-free protein synthesis means, comprising elimination of a cell-derived mechanism for inhibition of translation.

2. The method according to claim 1, wherein the elimination of a cell-derived mechanism for inhibition of translation is provided by controlling ATP-mediated sugar phosphorylation pathway.

3. The method according to claim 1 or 2, wherein the cell-derived mechanism for inhibition of translation is an embryo cell-intrinsic inducible system of inhibition of protein synthesis.

4. The method according to any one of claims 1 to 3, wherein a source of the cell extract is a wheat embryo extract in which contaminating endosperm components and low molecular protein synthesis inhibitors are substantially removed.

5. The method according to claim 1 or 2, wherein a source of the cell extract is E. coli, rabbit reticulocyte or insect cell extract.

6. The method according to claim 2, wherein the ATP-mediated sugar phosphorylation pathway is controlled by introducing at least one step selected from the followings:

1) removing monosaccharides,

2) removing phosphorylated sugars,

3) controlling production of monosaccharides from polysaccharides, and

4) controlling production of phosphorylated sugars from monosaccharides.

7. The method according to claim 6, wherein, in removing monosaccharides, the monosaccharide is a hexose.

8. The method according to claim 6, wherein the phosphorylated sugar is at least one selected from glucose 1-phosphate, fructose 1-phosphate, galactose 1-phosphate, glucose 1,6-diphosphate, fructose 1,6-diphosphate, galactose 1,6-diphosphate in removing phosphorylated sugars.

9. The method according to claim 6, wherein the monosaccharides and/or the phosphorylated sugars are removed by fractional elimination of molecular weight carried out by gelfiltration and/or with an ultrafiltration membrane.

10. The method according to claim 9, wherein the fractional elimination of molecular weight carried out by gel filtration and/or with an ultrafiltration membrane is repeated multiple times.

11. The method according to claim 6, wherein the production of monosaccharides from polysaccharides is controlled by controlling production of glucose from starch.

12. The method according to claim 11, wherein the

production of monosaccharides from polysaccharides is controlled by introducing at least one step selected from the followings:

1) removing or inactivating glycolytic enzymes,

2) eliminating polysaccharides and/or oligosaccharides, and/or disaccharides, and

3) adding a glycolytic enzyme inhibitor.

13. The method according to claim 12, wherein a glycolytic enzyme is removed or inactivated by removing a complex between said glycolytic enzyme and calcium after forming the complex.

14. A method for preparing cell extract, wherein removal of a cell-derived glycolytic enzyme is introduced by adding at least one selected from bentonite, activated carbon, silica gel, Sephadex and sea sand to said cell extract as a precipitation auxiliary agent.

15. The method according to claim 6, wherein the production of phosphorylated sugars from monosaccharides is controlled by introducing at least one step selected from the followings:

1) introducing an inhibitor against a sugar phosphorylation enzyme,

2) removing or inactivating an sugar phosphorylation enzyme,

3) eliminating said production from glucose metabolic pathway by enzymatic degradation of a hexose,

4) inhibiting an enzymatic reaction of sugar phosphorylation by chemical or enzymological modification of a hexose,

5) enzymatically and/or chemically alternating and/or modifying a phosphorylation site of the sugar, so that a phosphate group cannot bind to said phosphorylation site of the sugar.

16. The method according to claim 7, wherein the hexose is glucose.

17. The method according to claim 16, wherein a concentration of glucose in the cell extract is 10 mM or less when a concentration of the cell extract is 200 OD 260 nm.

18. The method according to claim 16, wherein a concentration of glucose in the cell extract is 6 mM or less when a concentration of the cell extract is 200 OD 260 nm.

19. The cell extract for use in a cell-free protein synthesis means prepared by the method according to any one of claims 1 to 18.

20. A cell extract for use in a cell-free protein synthesis means, wherein ATP-mediated sugar phosphorylation pathway is controlled.

21. The cell extract according to claim 20, wherein the ATP-mediated sugar phosphorylation pathway is controlled by introducing at least one step selected from the followings:

1) substantially removing or inactivating phosphorylated sugars,

2) substantially removing polysaccharides, oligosaccharides, disaccharides and monosaccharides,

3) substantially removing or inactivating glycolytic enzymes,

4) adding a glycolytic enzyme inhibitor,

5) substantially removing or inactivating phosphorylation enzymes,

6) adding a phosphorylation enzyme inhibitor,

7) enzymatically and/or chemically alternating and/or modifying a phosphorylation site of the sugar, so that a phosphate group cannot bind to said phosphorylation site of the sugar.

22. A cell-free protein synthesis method using the cell extract according to any one of claims 19 to 21.

23. A use of cell-free protein synthesis system using the cell extract according to any one of claims 19 to 21.

24. A reagent kit for use in a cell-free protein synthesis system comprising the cell extract according to any one of claims 19 to 21.